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Material Safety Data Sheet

NPG (NEOPENTYL GLYCOL FLAKE)

CAS No. :126-30-7

Identity No.	MSDS – NPG - 002
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Revised categories	Based on GHS regulation
Pages	1 / 9

1. Identification of the product and the supplier

1) Product name : NPG (NEOPENTYL GLYCOL FLAKE)

2) Advisable use and Restriction
- ○ Advisable use : Raw material for alkyd resins, unsaturated polyester resins, powder paint resin, other unspecified uses.
- ○ Restriction of product using : Used for recommended use.

3) Manufacturer/Supplier/Distributor information

- ○ Company : LG Chem, LTD. Acrylate plant
- ○ Address : 763, Jungheung-dong, Yeosu-si, Jeollanam-do
- ○ Emergency response number : 061-680-6963
- ○ Respondent : NPG production team

2. Hazard identification

1) Hazard classification :

- Eye Damage/Irritation : Category 1

2) Allocation label elements
- ○ Pictogram and symbol :

- ○ Signal word : Danger

- ○ Hazard statement :
  H318: Causes serious eye damage.

- ○ Precautionary statements
  - Prevention : P280: Wear protective gloves/protective clothing/eye protection/ face protection.
  - Response : P305+P351+P338: In IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and wash to do. Continue rinsing.
    P310: Immediately call a POISON CENTER or doctor/physician.

  - Storage : Not applicable

  - Disposal : Not applicable

3) Other hazard information not included in hazard classification
- NFPA Rating system : Health: **1,** Flammability: **0,** Reactivity: **1**

3. Composition/information on ingredients

Chemical Name	Common name Synonyms	CAS No.	Content (%)
NEOPENTYL GLYCOL	2,2-Dimethyl-1,3-Propanediol	126-30-7	≥ 99.5

4. First-aid measures

1) Eye contact :
-Remove contact lenses if present and easy to do.
-Get immediate medical advice/attention if irritating, pain, swelling, tear, dazzling eyes occur.
-Wash eyes immediately with large amounts of water.

2) Skin contact
-Wash off immediately with plenty of water and soap for at least 15 minutes.
-Wash and dry carefully contaminated clothing and shoes before reuse.
-In case of contact with chemicals, get immediate medical advice/attention.

3) Inhalation
-Move victims immediately to place with fresh air and not contaminated area.
-If not breathing, give artificial respiration and have a trained individual administer oxygen.
-Get medical attention immediately if inhaled.

4) Ingestion
-If swallowed, immediately call a POISON CENTER or doctor/physician.
-Do NOT induce vomiting.

5) Indication of immediate medical attention and notes for physician
-Call 911 or emergency medical service.
-In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
-Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
-Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-fighting measures

1) Suitable (and unsuitable) extinguishing media
○ suitable extinguishing media:
-Small fire: Dry chemical, CO_2, water spray, regular foam
-Large fire: regular extinguishing agent, fine water spray
○ unsuitable extinguishing media: Do not use straight streams

○ In case of major fire and large quantities:
-Move containers from fire area if you can do it without risk.

○ tank/trailer/train truck fire:
-Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.
-Cool containers with flooding quantities of water until well after fire is out.
-Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
-ALWAYS stay away from tanks engulfed in fire.

2) Specific hazards arising from the chemical
○ Thermal decomposition products : Carbon oxides
○ Fires and an explosion
-It could be a slight fire hazard.

3) Special protective equipment and precautions for fire-fighters
-Wear positive pressure self-contained breathing apparatus (SCBA).
-Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
-Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

6. Accidental release measures

1) Personal precautions, protective equipment and emergency procedures
-Water spray may reduce vapor; but may not prevent ignition in closed spaces.
-ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
-CALL Emergency Response Telephone Number on Shipping Paper first. If Shipping Paper not available or no answer, refer to appropriate telephone number listed on the inside back cover.
-Ventilate closed spaces before entering.

2) Environmental precautions and protective procedures
○ Atmosphere : Stop related control and shutoff the valve when the spilled in process.
○ Land :
-Take measures with spilled NPG not exceeding DIKE. Incinerate after sending to waste storage tank with shifting pump.
-Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
-Dike far ahead of liquid spill for later disposal.
○ Underwater : Prevent entry into waterways, sewers, basements or confined areas.

3) The methods of purification and removal
○ Small spill
-Absorb with non-combustible material.
-Move suitable container to spilled materials for later disposal.
○ Large spill
-Keep unauthorized personnel away.
-Make an embankment for further processing.
-ELIMINATE all ignition sources (heat, flares, sparks).

7. Handling and storage

1) Precautions for safe handling
-Do not breathe vapours.
-Wash thoroughly after handling.
-Wear suitable protective clothes and face shield.
-Avoid contact with skin, eyes and cloths.
-DO NOT eat, drink or smoke in product area.
-Use certificated protective equipment.

2) Conditions for safe storage
-Store locked up.
-Keep away ignition sources.
-Keep in well-ventilated place.

8. Exposure controls/personal protection

1) Occupational Exposure Limits
○ Regulation in Korean: Not applicable
○ US (NIOSH/OSHA AGGIH):
- NIOSH- Not applicable
- OHSA- Not applicable
- ACGIH- Not applicable
○ Biological Exposure Index: Not applicable

2) Appropriate engineering controls
-Provide local exhaust ventilation or other engineering controls to keep concentration of airborne under threshold limit value.
-Provide blaster resistance equipment at ventilation system if when explosive risk.
-Check legal suitability of exposure level.

3) Personal protective equipment
○ Respiratory protection
-Respiratory protection: Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respireatory protective equipment.

○ Eye protection
-Wear facepiece with goggles to protect from severe scattering dust.
-An eye wash unit and safety shower station should be available nearby work place.

○ Hand protection
-Wear appropriate chemical-resistant gloves that protect chemicals directly.

○ Body protection
-Wear appropriate protective chemical-resistant clothing, if the severity of skin exposure.

9. Physical and chemical properties

1) Appearance	White crystals (20 ˚C, 1013 hPa)
2) Odor	Sweetish odor
3) Threshold of odor	Not available

4) pH	Not available
5) Melting point/freezing point	127 ~ 130 ˚C (1013 hPa)
6) Initial boiling point and boiling range	209 ℃ (1013 hpa)
7) Flash point	103 ˚C (DIN 51 758)
8) Evaporation rate	Not available
9) Flammability (solid, gas)	Non flammable(Directive 84/449/EEC)
10) Upper/lower flammability or explosive limits.	11.4% / 1.1%
11) Vapour pressure	0.00024 hPa (20 ˚C)
12) Solubility(ies)	830 g/L (20 ˚C)
13) vapour density	3.6 (AIR=1)
14) Specific gravity/density	1.07 g/cm³ (20 ˚C)
15) n-octanol/water partition coefficient	LogKow=-0.15 (25 ˚C)
16) Auto ignition temperature	399 ˚C (1013 hPa)
17) Degradation temperature	Not available
18) Viscosity	Not applicable
19) Molecular weight	104.1476 g/mol

10. Stability and reactivity

1) Chemical stability
-Stable under normal temperatures and pressures

2) Possibility of hazardous reactions
-No dangerous reaction known under conditions of normal use.

3) Conditions to avoid
-Avoid heat, open flames, sparks or other sources of ignition.
-Avoid contact with prohibited mixture materials.

4) Incompatible materials
-oxidizing agent, acid chloride, acid anhydride

5) Hazardous decomposition product
-harmful or toxic gases, carbon oxides

11. Toxicological information

1) Information on the likely routes of exposure
○ Inhalation : May cause respiratory irritation.
○ Skin contact : May cause mild skin irritation.
○ Eye contact : May cause modertate eye irritation.

2) Delay by short term and long term exposures, acute and chronic effect

○ Acute toxicity - Oral : Not classified,
Rat, LD_{50} > 6,400 mg/kg bw (OECD TG 401)
- Dermal : Not classified
guinea pigs, LD_{50} > 4000 mg/kg bw (guinea pigs) (OECD TG 402)
- Inhalation : Not classified
Rat, LC0 (8h) > 0.14 mg/L (OECD TG 403)

○ Skin Corrosion/ Irritation: Not classified
- In test on skin irritation with rabbits, only slight irritant effects to the skin of rabbits were induced; the test substance is not irritant to the skin. (OECD TG 404)

○ Serious Eye Damage/ Irritation: Category 1
- In test on eyes irritation with rabbits, the first 72 h after instillation necrosis of nictitating and mucous membrane of the conjunctivae of all 6 rabbits were reported. (OECD TG 405)

○ Respiratory sensitizer: Not classified
- It is supposed to be non sensitizing to the respiratory tract as well.

○ Skin Sensitization: Not classified
- As Neopentylglycol was found to be non-sensitizing to the skin.

○ Carcinogenecity: Not classified
- IARC, ACGIH, NTP, OSHA, Regulation 1272/2008, US EPA: Not listed

○ Mutagenicity: Not classified
- Negative reactions were observed in vitro (mammalian chromosome aberration test, Ames test) and in vivo(HPRT test)

○ Reproductive toxicity: Not classified
- There were no effect of test substance on copulation, fertility and estrus cycle of rats. Delivery was normal for dams except for one animal of control group. No effects of test substance on dams during the lactation period were observed. Stillborn, dead pups and pups killed at day 4 of lactation showed no abnormal gross finding suggested to be attributable to the treatment with test substance. (NOAEL = 1000 mg/kg bw/day) (OECD TG 422, GLP).

○ Specific target organ toxicity (single exposure): Not classified
- In an inhalation hazard test neither mortality nor clinical signs were found in male and female rats exposed to saturated vapor (140 mg/L) at 20°C for 8 h.

○ Specific target organ toxicity (repeat exposure): Not classified
- The doses 0, 100, 300, 1000 mg/kg/day were administered in oral gavage for 42 days to the males and for 14 days before mating to the females and continued through 3-rd day of lactation. Chemical examination of blood revealed elevated values of: total protein, total bilirubin and albumin for male rats receiving 300 and 1000 mg/kg of neopentyl glycol. Absolute and relative weights of liver and kidneys of both males and females receiving 300 and 1000mg/kg were elevated.
Histopathological examination revealed high incidence of protein casts, hyaline droplet and basophilic change in renal tubules in male rats on 1000mg/kg dose. (OECD TG 422, GLP)

○ Aspiration hazard: Not available

12. Ecological information

1) Aquatic Ecotoxicity
-Acute toxicity: Not classified
-Chronic toxicity: Not classified
○ Fish : 48hr-LC_{50}(*Oryzias latipes*) > 10,000 mg/l
○ Crustacea: 48hr-EC_{50}(*Daphnia magna*) > 500 mg/l (EU Method C.2)
○ Algae : 72hr-EC_{50}(*selenastrum capricornutum*) > 500 mg/l (DIN 38412, Part 9)

2) Persistence and degradability
○ Persistence : Low persistency (Log Kow is less than 4 (logKow=-0.15) (25 °C))
○ Degradability : In contact with water 2,2-dimethylpropane-1,3-diol will hydrolysis slowly.

3) Bioaccumulative potential
○ Biodegradation : 70~80 % biodegradation after 28 days (OECD TG 301B)
○ Bioaccumulation : Low Bioaccumulation (BCF< 9 (OECD TG 305B))

4) Mobility in soil
- low potency of mobility to soil (Koc=1 L/kg)

13. Disposal considerations

1) Disposal method
-Waste must be disposed of in accordance with federal, state and local environmental control regulations.

2) Disposal precaution
-Consider the require attentions in accordance with waste treatment management regulation.

14. Transport information

1) UN Number : Not applicable
2) UN Proper shipping name : Not applicable
3) Transport Hazard class : Not applicable
4) Packing group : Not applicable
5) Marine pollutant : Not applicable
6) Special safety response for transportation or transportation measure
○ Emergency schedule for fire : Not applicable
○ Emergency schedule for spillage : Not applicable

15. Regulatory information

○ Korea
- Korea Occupational Safety and Health Regulation: Not applicable
- Toxic Chemical Control Act : Korean Existing Chemicals (KE-11811)
- Dangerous Material Safety Management Regulation : Not applicable
- Waste Control Act : Not applicable

○ EU Classification
- Classification: Not classified
- Risk phrases : Not classified
- Safety phrases : Not classified

○ U.S.A. management information
- OSHA regulation (29CFR1910.119) : Not applicable
- CERCLA 103 regulation (40CFR302.4) : Not applicable
- EPCRA 302 regulation (40CFR355.30) : Not applicable
- EPCRA 304 regulation (40CFR355.40) : Not applicable
- SARA 313 regulation (40CFR372.65) : Not applicable

○ Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade : Not applicable

○ Stockholm Convention on Persistent Organic Pollutants (POPs) : Not applicable

○ Mont- real Protocol on Substances that Delete the Ozone Layer : Not applicable

○ Other
- U.S.A management information: Section 8(b) Inventory (TSCA): Present
- Japan management information : Existing and New Chemical Substances (ENCS): (2)-240
- China management information : Inventory of Existing Chemical Substances (IECSC): Present
- Canada management information : Domestic Substances List (DSL): Present
- Australia management information : Inventory of Chemical Substances (AICS): Present
- New zealand management information : Inventory of Chemicals (NZIoC): HSNO Approval: HSR003955
- Philippines management information : Inventory of Chemicals and Chemical Substances (PICCS): Present

16. Other information

1) Information source and references:
- OECD Chemicals Screening Information Data Sets (SIDS): http://www.chem.unep.ch/irptc/sids/OECDSIDS/126307.pdf
- ECB: ESIS (European chemical Substances Information System): http://ecb.jrc.it/esis
- International Uniform Chemical Information Database (IUCLID) (http://ecb.jrc.it/esis)
- Chemical Safety Information from Intergovernmental Organizations – INCHEM (ICSC)
- Korea Occupational Health & Safety Agency: http://www.kosha.net
- Korea dangerous material inventory management system (http://hazmat.nema.go.kr)
- National chemicals information systems (http://ncis.nier.go.kr)

2) Issue date : 1997. 7. 25.

3) Revision number and date : 2011. 11. 04. (9th)

4) Other material safety data sheet information:
LG Chem LTD., Korea Occupational Health & Safety Agency

-The contents of this MSDS documentation are based on current knowledge and information. Some of the information contained in the information provided by the Korea Occupational Safety & Health Agency. This MSDS were made of the informational purposes for the safe handling when education or use of the production department workers. Therefore we make no guarantee for result obtained, and assume no responsibility for damages incurred by use of this product. But the material used for the purpose of the data requested is available for further information.

<Record management>

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